

**Attorney Docket No. 05793.3015**

**United States Patent Application**

**of**

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**for**

**METHOD AND APPARATUS FOR MONITORING  
GUARANTEED LOANS AND NOTIFYING GUARANTORS**

FILED OCT 23 2003

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## TITLE OF THE INVENTION

### METHOD AND APPARATUS FOR MONITORING GUARANTEED LOANS AND NOTIFYING GUARANTORS

#### Related Application

The following identified U.S. patent application is relied upon and is incorporated by reference in its entirety in this application:

U.S. Patent Application Serial No., \_\_\_\_\_, entitled "METHOD AND APPARATUS FOR PROVIDING LOAN INFORMATION TO MULTIPLE PARTIES," by Peter Schnall, filed on the same date herewith.

## BACKGROUND OF THE INVENTION

### I. Field of the Invention

This invention generally relates to financial data processing systems and, more particularly, to a method and apparatus for monitoring guaranteed loans and notifying guarantors.

### II. Background and Material Information

Many loans require a guarantor to guarantee the payback of the loan granted to a loan recipient. The guarantor may be an individual, a company or any other type of entity. Typically, lending institutions require the guarantor's backing on a loan because the loan recipient does not meet certain credit criteria established by the lending institution. For example, a business or person receiving a loan may have a poor credit history, one or more bankruptcy filings, low or no income stream, or other characteristics that make funding the loan risky. The guarantor helps the loan recipient qualify for a loan, despite these potentially higher risk factors, based on the guarantor's creditworthiness and willingness to guarantee payback of the loan in the event the loan recipient defaults on the loan.

Loans guaranteed by a guarantor include small credit card loans to large real estate loans. In each case, the loan recipient has the primary responsibility for paying back the loan according to the loan terms. If the loan recipient pays the loan according to the terms, the guarantor has no financial obligation to the lending institution. However, the guarantor may become financially liable if the loan

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recipient fails to pay installments on the loan or otherwise does not meet the terms of the loan. In the latter situation, the lending institution may look to the guarantor as the secondary party responsible for paying back the balance of the loan.

The guarantor may be unpleasantly surprised with the additional financial responsibility of satisfying the loan recipient's obligations. Unfortunately, in many cases, it may be too late for the guarantor to work with the loan recipient to pay back the loan amount or to restructure the terms of the debt. As a result, without sufficient warning or notification, the guarantor will have no choice but to payoff the loan recipient's debt.

In view of the foregoing limitations, there is a need in the financial industry to inform a guarantor that a loan recipient has failed to make payments and/or is at risk of defaulting on the loan. The guarantor could then take corrective action or steps in a timely manner to prevent the loan recipient from defaulting on the loan and eliminate the burden of paying back the loan.

#### **SUMMARY OF THE INVENTION**

In view of the foregoing, a method and apparatus are provided, consistent with the features of the invention, of notifying a guarantor of events likely to affect a guaranteed loan. The disclosed method and apparatus provides loan data with information on at least one guaranteed loan wherein the loan data includes information about the loan, such as the terms thereof. The method and apparatus then monitors changes in the loan data and determines when changes in the loan data corresponding to the at least one guaranteed loan indicates a likelihood that the terms of the loan may not be met. Based on the determination the method and apparatus provides a notification to the guarantor based on the determination that the loan terms may not be met.

#### **BRIEF DESCRIPTION OF DRAWINGS**

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate the various features and embodiments of the invention and, together with the detailed description, serve to explain the advantages and principles of the invention. In the accompanying drawings:

FIG. 1 is a block diagram of a financial data processing system consistent with the features of the invention;

FIG. 2 is a block diagram of components used in a credit processing system for providing guarantor alerts, in accordance with the present invention; and

FIG. 3 is an exemplary flow chart indicating the various processes and operations for providing notification to guarantors, in accordance with the present invention.

### DETAILED DESCRIPTION

Reference will now be made in detail to systems and methods, consistent with the present invention, that are illustrated in the accompanying drawings. Wherever possible, the same reference numbers in different figures refer to the same or similar parts.

FIG. 1 is a block diagram of a financial data processing system 100 consistent with the features of the present invention. System 100 includes a loan processing system 104, an electronic messaging system 108, a written notification system 110, and guarantor system 112. Loan processing system 104 and guarantor system 112 may be general purpose computers or computer subsystems within larger computer systems.

There are several methods to integrate loan processing system 104 or guarantor system 112 into existing or "legacy" computer systems. For example, these systems can be connected to the legacy computer system using a standard network protocol such as TCP/IP. For example, data being analyzed and used by loan processing system 104 can be transferred over a TCP/IP "socket" between loan processing system 104 and the legacy computer systems. Alternatively, data can be transferred between loan processing system 104 and legacy computer system using data stored on a tape or floppy disk storage device.

Loan processing system 104 receives information on loan recipient 106 and determines the loan recipient's qualifications for a loan based on credit information 105 and loan information 102. Loan recipient 106 can be a person such as a student, an organization such as a corporation or partnership, or any other entity capable of

receiving a loan. Credit information 105 includes information retrieved from one or more credit reporting agencies that indicate the creditworthiness of an entity or individual, such as loan recipient 106. Loan information 102 includes loan qualification information and information indicating the term and rate of the loan, the monthly payments required to pay off the loan, and historical payment information associated with the loan.

If loan processing system 104 determines that loan recipient 106 does not qualify individually for the loan, then credit information associated with a guarantor 111 may be analyzed to approve the loan. Guarantor 111 can be a person, an organization such as a corporation or partnership, or any other entity capable of guaranteeing a loan. Once a loan has been issued to loan recipient 106 backed by guarantor 111, loan information 102 may be regularly updated to provide current information on the loan. The current loan information may include, for example, the current outstanding balance of the loan, the last payment amount and date, and late payments or penalties on the loan. Loan information 102 may also include information identifying the guarantor of the loan and contact information for sending alerts and/or other types of notification.

Loan processing system 104 processes loan information 102 associated with a loan made to loan recipient 106 and determines when notification or alert should be sent to guarantor 111. If more than one guarantor is responsible for the loan, a separate notification can be sent to each guarantor. These notifications or alerts can be sent to guarantor 111 directly using written notification system 110 or through guarantor system 112 using electronic messaging system 108, including via the Internet. Guarantor system 112 can be a general purpose computer or a specialized device such as a wireless phone capable of receiving electronic messages. Electronic messaging system 108 may process various electronic messages including e-mail, Web access, facsimile, telephone messaging and/or electronic paging, to send notification to the guarantors. Written notification system 110 can be an automated system or a system controlled by personnel for sending written notification by letter or postcard through the mail to guarantor 111. Both forms of notification may be used

to send alerts or, in accordance with a feature of the invention, the preferred form of sending alerts may be selected by the guarantor.

According to an aspect of the invention, guarantor alerts are sent in response to changes in the loan information detected by loan processing system 104. By way of example, loan processing system 104 may send a notification to a guarantor of the loan warning the guarantor that payment on the loan has not been paid in a timely manner and/or has been forwarded to a collection agency for collection. This notification can be sent early enough in the process so that the guarantor can contact the loan recipient and encourage payment or make other arrangements to pay the loan. In this example, the notification occurs when loan processing system 104 compares entries in a database associated with the loan processing system 104 indicating that the loan has not been paid or sent to collection. Loan processing system 104 can be programmed to monitor changes in loan information each time a database update occurs or at fixed time intervals, such as the close of business each day.

FIG. 2 is an exemplary block diagram of the components that can be used to implement the loan processing system 104 and provide notification to a guarantor of a loan. Together, these components alert a guarantor that a guaranteed loan has not been paid in a timely manner and may become the responsibility of the guarantor. Such alert may be communicated by using a TCP/IP protocol, for example. Preferably, these components include a memory 204, a processor 206, a communication connection 208, a secondary storage 210, and input-output ports 212 that are inter-connected by a bus infrastructure or network 230. In accordance with an aspect of the invention, communication connection 208 may include communication devices compatible with asynchronous transfer mode (ATM), Fiber Distributed Data Interface (FDDI), Copper Distributed Data Interface (CDDI) or other equivalent protocols. CDDI is the implementation of FDDI protocols over shielded twisted pair (STP) and unshielded twisted pair (UTP) cabling. Secondary storage 210 can be a hard disk or other permanent storage device used to hold information used in processing information with processor 206. Input/output ports 212 may include serial ports or parallel ports for communication with a console, keyboard, mouse, printer or

other devices. Although these components are highlighted, other components not specifically included herein may be included as part of different implementations of loan processing system 104 that are consistent with the teachings of the invention.

As illustrated in FIG. 2, memory 204 may be configured to store an operating system 214, a loan processing module 216, and a guarantor alert module 218 that are executed by processor 206. Operating system 214 manages resources such as memory 204 and secondary storage 210, as well as the allocation of bandwidth through communication connection 208. Operating system 214 also controls execution of modules on processor 206 and location of modules in memory 204.

Loan processing module 216 may include all of the necessary data processing tasks associated with loans and other debt instruments. These tasks include gathering information on loan recipients such as creditworthiness, determining maximum-qualified loan amounts based on creditworthiness, tracking payment of loans, and identifying loans made with a guarantee of payment by a guarantor. The data associated with the credit processing performed by loan processing module 216 can be stored in and accessed from a loan database 220. Loan database 220 may be organized and stored within secondary storage 210. Loan database 220 includes raw data on loans made by the lending institution (such as loan information 102) and may also includes data from credit reporting agencies (such as credit information 105) imported through communication connection 208. This loan information can be stored as raw credit and loan information within loan database 220 and/or may include a point-score system used by the credit reporting industries such as Fair Issac (FICO). Preferably, at least one table in loan database 220 will also indicate whether a loan has be co-signed and guaranteed by a guarantor. Contact information and notification preferences for each guarantor can also be provided in the loan database 220, in accordance with an aspect of the invention.

Guarantor alert module 218 includes data processing tasks, consistent with the features of the invention, for sending alerts to guarantors depending on the state of a particular guaranteed loan. Guarantor alert module 218 can be developed in a database programming language such as structured query language (SQL) or 4GL to

access loan database 220, analyze the information and generate alerts from loan processing system 104. Alternatively, alert module 218 can be developed using object-oriented programming languages such as Java or non-object oriented programming languages such as C. In operation, guarantor alert module 218 obtains loan information from loan database 220. For example, guarantor alert module 218 can use SQL statements to retrieve the appropriate fields of information from loan database 220 corresponding to changes in loan information. As discussed above, the loan information can be transferred over a network connection or may be uploaded using a secondary storage device such as a tape or floppy-disk and stored in loan database 220.

Certain values associated with loan information in loan database 220 are compared against threshold values to identify loans potentially subject to default. For example, guarantor alert module 218 may locate loans in loan database 220 with late payments of over 60 days. A loan having a late payment over 60 days may be identified by alert module 218 and a notification may be sent to guarantor that the loan may be entering default.

FIG. 3 is an exemplary flow chart indicating the various processes and operations performed by the guarantor alert module 218 to transmit an alert to guarantors that a trigger event associated with a guaranteed loan has occurred. Preferably, the notifications will serve as a warning to the guarantor that the loan may soon be in default, thus, enabling the guarantor to take measures to guarantee payment of the loan.

As illustrated in FIG. 3, guarantor alert module 218 is initialized and executed by processor 206 in FIG. 2 to identify each loan associated with a guarantor (step 302). Guarantor alert module 218 may be initialized and executed on a periodic basis such as one or more schedule time intervals each day or continuous basis each time an update is applied to loan database 220. In order to identify guaranteed loans, guarantor alert module 218 may access the appropriate table in loan database 220 indicating each loan that is guaranteed by a guarantor. The table in loan database 220 may include a record entry for each loan that indicates information on the loan



5 recipient, the guarantor(s) on the loan (if any) and the contact information for the guarantor, such as an e-mail address or an address. Additionally, notification preferences may be provided to identify the type of information to monitor in loan database 220 and the preferred form of notification (e.g., electronic, written or none) for sending notifications to the guarantor. The notification preferences may also be used to determine if notification service is active for a particular loan.

10 For each loan identified as having a guarantor, guarantor alert module 218 determines if loan servicing associated with the loan includes notifying the guarantor of changes associated with the loan (step 304). Some guarantors may wish to opt out of the guarantor alert service for various reasons, including to save money if a premium is charged by the lending institution for the service. If there is no guarantor notification service for the identified loan, then servicing of that loan by the guarantor alert module 218 is terminated or skipped, and the next loan is analyzed.

15 As further shown in FIG. 3, for each loan having the guarantor alert service, guarantor alert module 218 monitors changes in the loan data related to payment of the loan. Specifically, guarantor alert monitor module 218 checks for changes in loan data that indicates the loan recipient may not meet the terms of the loan or default on the loan (step 306). For example, guarantor alert module 218 may compare a threshold limitation related to the terms of the loan with the actual loan information associated with the loan. Exceeding the threshold limitation may create a trigger event indicating that the loan may be at risk of going into default. For each guaranteed loan, one or more trigger events may be monitored by the guarantor alert module 218 that are either selected by the guarantor or correspond to a predetermined set of trigger events selected by the lending institution. Preferably, the set of trigger events tracked by the alert module 218 correspond to events indicating that a loan recipient may default on the loan or that a term of the loan agreement may be violated.

20 For example, one trigger event may occur when the total loan amount on a credit card equals or exceeds the maximum loan amount threshold set by the lending institution. For example, a student in college may maximize the debt allowed on a credit card guaranteed by his or her parents. Another trigger event may occur when

the maximum time period to make payments on a loan has been exceeded or the minimum required payments have not been met for one or multiple payment periods. Yet another trigger event may occur when the maximum debt has not been reached and the monthly payment on a debt has exceeded a maximum monthly payment threshold limitation. For example, a person with a low income may not maximize the debt carried on a credit card yet may have exceeded a reasonable monthly payment based on the current interest rate of the loan and the balance of the loan being carried forward from period to period. This may occur using short term debt such as revolving credit type credit cards or lines of credit. Yet another trigger event may occur when a person's credit score drops and the loan amount is riskier than allowed based on the credit score. The types of trigger events discussed above are meant as illustrations and examples, and are not to be viewed as an exhaustive listing of all the trigger events that can be monitored. Accordingly, guarantors may be notified of different events other than those discussed above, as well as various combinations of the events discussed above or determined to be significant.

Once the change in loan information indicates a loan default is imminent, guarantor alert module 218 provides notification to the guarantor or other party that default on the loan is likely (step 308). For example, if the guarantor requests verbal notification (step 310), then the lending institution or an automated message center will verbally notify the guarantor (step 314). The verbal notification may be sent to the guarantor using a voice communication system, such as a telephony based network. If, however, the guarantor requests to be notified electronically (step 316), then notification may be directed to electronic messaging system 108 where an electronic message, for example, a paging or e-mail message is generated and sent to the guarantor (step 312). Alternatively, a Web site may post such information which the guarantor can access from time to time. Such a Web site may be made secure so that access is limited to authorized users only. The electronic message may describe the particular change in loan information that has occurred and identify the associated guaranteed loan, as well as other pertinent or current loan information (e.g., outstanding balance, last payment amount and date, etc.). Alternatively, if the

guarantor requests written notification then guarantor alert module 218 may cause written notification system 110 to generate a printed notification using a printer and send the notification to the guarantor through the mail describing the change in loan information and other pertinent information related to the loan (step 318).

Alternatively, the lending institution may decide the type of notification to transmit rather than having the guarantor decide the appropriate type of notification.

While specific embodiments have been described herein for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention as set forth in the claims. For example, the features consistent with the invention are not limited to guaranteed loans. Notification may also be used by lending institutions and other organizations to track any type of loan issued to a loan recipient, including loans that are not backed by a guarantor. The notification may be used by the financial institution to monitor when the financial status of the loan recipient changes and the loan is at risk of being defaulted. By providing such notification at an early stage, the status of loans can be monitored by the lending institution or organization to determine which loans are at risk and to take measures to prevent the loans from going into default. Accordingly, the invention is not limited to the above described embodiments, but instead is defined by the appended claims in light of their full scope of equivalents.